



## Photoelectric sensors W9-3, Photoelectric retro-reflective sensor, autocollimation

WL9M4-3P3432



**Model Name** > [WL9M4-3P3432](#)  
**Part No.** > [1051907](#)



*Illustration may differ*

#### At a glance

- High-performance retro-reflective sensor in ultra-rugged VISTAL™ housing
- PinPoint LED for highly visible and precise light spot
- Autocollimation optics
- Variable mounting with M4 hole pattern
- Wide range of connection options

#### Your benefits

- Rugged VISTAL™ housing provides reliable installation and operation
- Reliable object detection in all situations using best-in-class performance
- Quick and easy alignment with reliable object detection due to the highly visible PinPoint light spot
- M4 slotted hole mounting for multiple mounting possibilities
- One housing with a wide range of options makes machine integration easy
- Variety of accessories for simple mounting



#### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric retro-reflective sensor, autocollimation |
| Dimensions (W x H x D):          | 12.2 mm x 50 mm x 23.6 mm                              |
| Housing design (light emission): | Rectangular                                            |
| Mounting hole:                   | M4                                                     |
| Sensing range max.:              | 0 m ... 5 m <sup>1)</sup>                              |
| Sensing range:                   | 0 m ... 3 m <sup>2)</sup>                              |
| Type of light:                   | Visible red light                                      |
| Light source:                    | PinPoint LED <sup>3)</sup>                             |
| Wave length:                     | 650 nm                                                 |
| Teach-in:                        | Single teach-in button                                 |
| Adjustment:                      | Teach-in                                               |
| Light spot size (distance):      | Ø 45 mm (1.5 m)                                        |

<sup>1) 2)</sup> PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

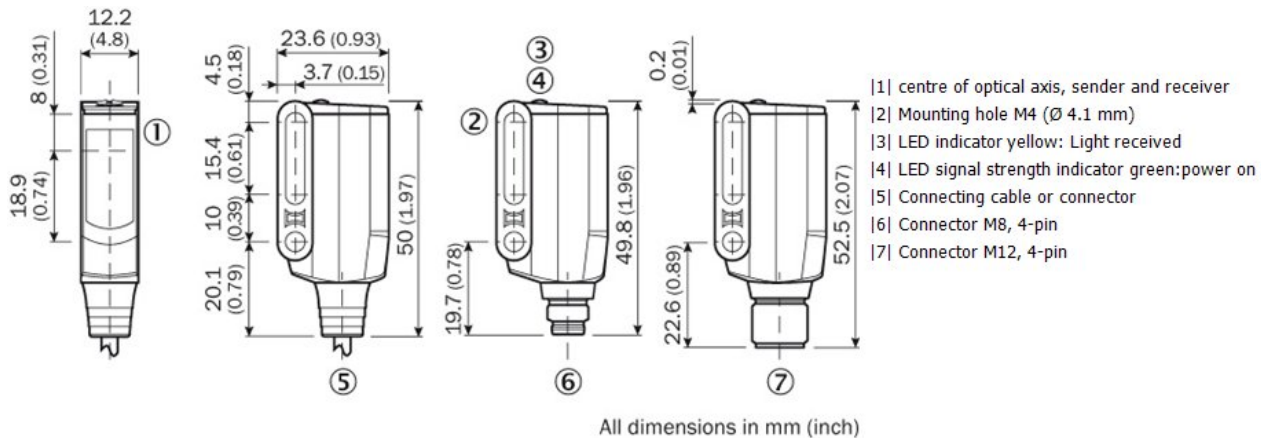
#### Mechanics/electronics

|                    |                                   |
|--------------------|-----------------------------------|
| Supply voltage:    | 10 V DC ... 30 V DC <sup>1)</sup> |
| Power consumption: | ≤ 30 mA <sup>2)</sup>             |
| Output type:       | PNP <sup>3)</sup>                 |
| Output function:   | Complementary                     |

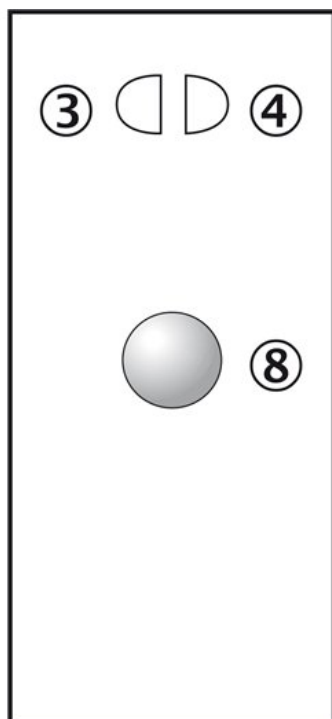
|                                    |                                                       |
|------------------------------------|-------------------------------------------------------|
| Switching mode:                    | Light/dark-switching <sup>4)</sup>                    |
| Output current I <sub>max</sub> :: | ≤ 100 mA <sup>5)</sup>                                |
| Response time:                     | < 0.5 ms <sup>6)</sup>                                |
| Switching frequency:               | 1,000 Hz <sup>7)</sup>                                |
| Connection type:                   | Cable with connector M12, 4-pin, 120 mm <sup>8)</sup> |
| Cable material:                    | PVC                                                   |
| Conductor cross-section:           | 0.14 mm <sup>2</sup>                                  |
| Circuit protection:::              | A, B, C <sup>9)</sup> <sup>10)</sup> <sup>11)</sup>   |
| Protection class:                  | III                                                   |
| Weight:                            | 80 g                                                  |
| Polarisation filter:               | ✓                                                     |
| Housing material:                  | Plastic, VISTAL                                       |
| Optics material:                   | PMMA                                                  |
| Enclosure rating:                  | IP 66<br>IP 67<br>IP 69K                              |
| Ambient operating temperature:     | -40 °C ... 60 °C                                      |
| Ambient storage temperature:       | -40 °C ... 75 °C                                      |
| UL File No.:                       | NRKH.E181493                                          |

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> Without load <sup>3)</sup> <sup>4)</sup> Q = light-switching <sup>5)</sup> As of Tu 50 °C, a max. load current I<sub>max</sub>. = 50 mA is permitted <sup>6)</sup> Signal transit time with resistive load <sup>7)</sup> With light/dark ratio 1:1 <sup>8)</sup> Do not bend below 0 °C <sup>9)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>10)</sup> B = inputs and output reverse-polarity protected <sup>11)</sup> C = interference suppression

## Dimensional drawing

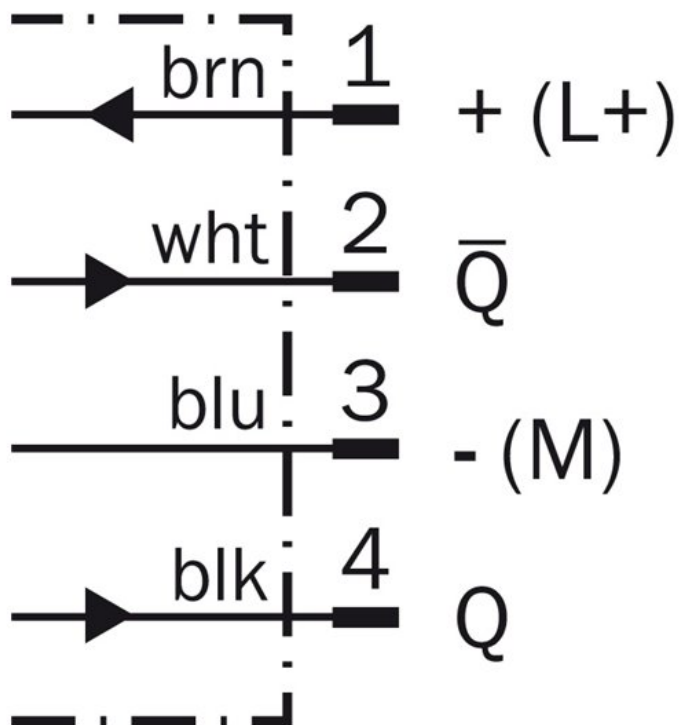


## Adjustments possible

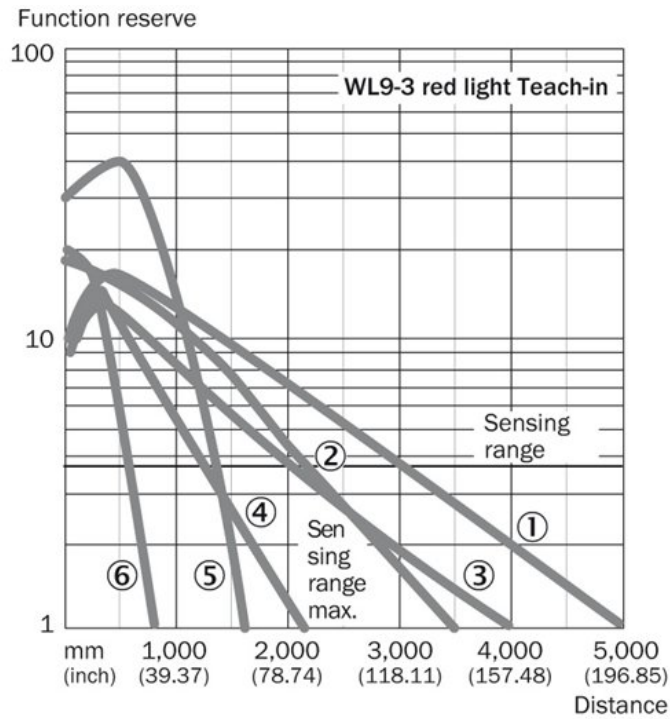


- |3| LED indicator yellow: Light received
- |4| LED signal strength indicator green: power on
- |8| Teach-in button

## Connection diagram

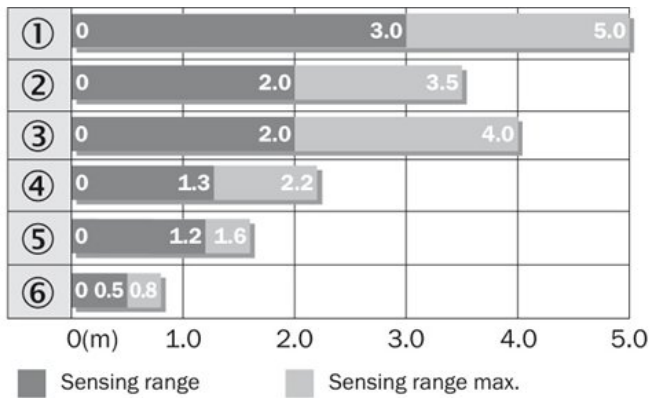


## Characteristic curve



- [1] PL80A
- [2] P250
- [3] PL40A
- [4] PL20A
- [5] PL10F
- [6] REF-IRF-56

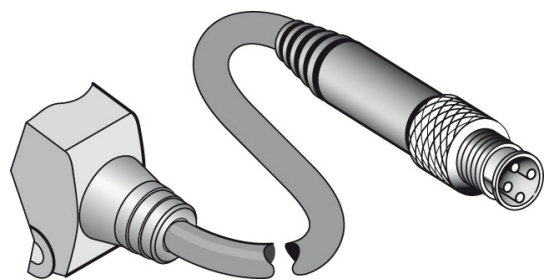
## Sensing range diagram



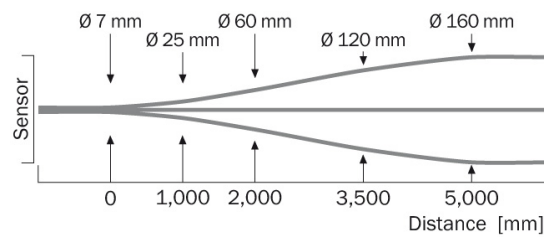
- [1] PL80A
- [2] P250F
- [3] PL40A
- [4] PL20F
- [5] PL10F
- [6] REF-IRF-56

|   | Reflector type | Sensing range |
|---|----------------|---------------|
| ① | PL80A          | 0 ... 3.0 m   |
| ② | PL250F         | 0 ... 2.0 m   |
| ③ | PL40A          | 0 ... 2.0 m   |
| ④ | PL20F          | 0 ... 1.3 m   |
| ⑤ | PL10F          | 0 ... 1.2 m   |
| ⑥ | REF-IRF-56     | 0 ... 0.5 m   |

Connection type



Light spot size



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